

# TECHNICAL PAPER INDEX

## TOPIC SESSIONS

MONDAY, MAY 22, 1995

### M10 Leadership Strategies: Develop, Measure, and Predict Employee Performance (L)

*The Interactive Leadership Challenge: How to Relate to Others the Way They Want You To* 1

Christopher J. Derry, Pioneer, QuantumLeap, Bowling Green, KY

42104

Key words: behavior, communication, information age, interpersonal,  
knowledge-worker, language, relationship

*Assessing Quality Consciousness: The Missing Dimension of Quality Management* 9

Jeffrey A. Jolton, Ph.D., Consulting Psychologist, and John W. Jones,

Ph.D., ABPP, Vice President—Research and Services, London

House, Rosemont, IL 60018

Key words: employee hiring, measurement, personnel evaluation,  
training

*The Spider Chart: A Unique Tool for Performance Appraisal* 16

Cephas B. Rogers, Sr. Statistical Engineer, EMC Corporation,

Hopkinton, MA 01748

Key words: benchmarking, empowerment, job analysis, spider chart

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*Connectivity—Empowering Process Owners Under ISO 9000* 23

Robert A. Abbott, Manager—Quality Improvement Programs, GE

Appliances, Louisville, KY 40225

Key words: business process, empowerment, flowchart, process map,  
ISO 9000

*Taking Action on Customer Survey Results* 30

Kayla Cohen, Manager, External Quality Initiatives, and Kimberly

Rutledge, QMS Program Manager, Andersen Consulting, Chicago,

IL 60602

Key words: customer satisfaction, customer surveys, process  
improvement, quality improvement team (QIT), root cause analysis

*Total Quality and Basic Skills* 37

Glenda Lewe, Skills Analyst, Glenda Lewe Consulting, Ottawa,

Ontario, K1R 7T1

Key words: job analysis, change agents, training

*Quality Makes a Difference in an Insurance Company: Client Satisfaction Improves by Following a Structured Process Improvement Method*

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Helmut O. Woerner, Quality Management, National Life of Vermont, Montpelier, VT 05604

Key words: service (insurance), client (customer) involvement, stakeholder participation, empowerment, process improvement

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*A System for Measuring Short-Term Producibility*

50

Thomas M. Keenan, Staff Statistician, Brady Leads Division, Medtronic, Inc., Minneapolis, MN 55432

Key words: capability study, process variability, product development, run charts, special causes

*A Practical Method to Prioritize Problem Investigations*

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Ming-Wei Lu, Senior Reliability Specialist, and Richard J. Rudy, Reliability Executive, Chrysler Corporation, Auburn Hills, MI 48326

Key words: Bayesian, problem solving, ranking, warranty data

*Measurement Error Effect on Control Chart Performance*

66

Hans-Joachim Mittag, Ph.D., FernUniversität, Department of Economics, D-58084, Hagen, Germany

Key words: statistical process control, control charts, measurement error, gage capability

M13 Leadership for the 21<sup>st</sup> Century (L)

*Leadership—It's Everybody's Business*

74

Allison J. Kane, ASQC Certified Quality Engineer, Sandia National Laboratories, Albuquerque, NM 87123

Key words: challenge, enable, encourage, inspire, model

*Every Manager Can Become a "True Leader"*

82

William O. Orgel, M.A., Advisor in Quality, Solutions, et cetera, Brooklyn, OH 44144

Key words: continuous improvement, Deming cycle, planning, scientific management, variation

M14 When the Silver Bullet Hits Instant Pudding (SI)

*No Paper Submitted*

Ian S. Bradbury, GM Powertrain Group Headquarters, Pontiac, MI 48340-2920

*No Paper Submitted*

Chester A. Francke, Flint, MI 48532

*Theory of Knowledge on a Bumper Sticker: Deming's Abstruse Aphorisms*

92

Jess E. House, Associate Professor, The University of Toledo, Toledo, OH 43606

Key words: W. Edwards Deming, Clarence I. Lewis, profound knowledge, Walter A. Shewhart, theory of knowledge

*No Paper Submitted*

Ronald D. Moen, Associates in Process Improvement, Clarkston, MI 48348

M15 Quick Planning To Ensure Organizational Readiness for Quality (IS)

*Quick Planning to Ensure Organizational Readiness for Quality*

98

Marcia C. Guzy, Principal Quality Engineer, Digital Semiconductor, Digital Equipment Corporation, Hudson, MA 01749

Key words: implementation, partnership, planning, program development, quality management

M16 The Team Approach To Customer Satisfaction (D/TC)  
Electronics Division

*Teamwork: The Road to Improvement*

102

Milton J. Kowalewski, Jr., EG&G Rocky Flats, Inc., Golden, CO 80402-0464

Key words: empowerment, government, project teams, reengineering, total quality management

*Quality, Leadership and the Power of Teams*

107

Christina Sanes, Department Manager, AT&T Bell Laboratories, Whippany, NJ 07981

Key words: business partnerships, culture, culture change, teamwork

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Constance K. Weimer, Manager, Administrative Systems, AT&T Bell Laboratories, Naperville, IL 60566-7045

Key words: customer focus, innovation, measurement, productivity, service organization

M17 Measurement Processes: From Theory to Application (D/TC)  
Measurement Quality Division

*Analyzing Uncertainty for Risk Management*

120

Howard Castrup, Ph.D., President, Integrated Sciences Group,  
Bakersfield, CA 93306

Key words: consumer's risk, error model, measurement decision risk,  
producer's risk, uncertainty

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David Deaver, Fluke Corporation, Everett, WA 98206

Key words: calibration, graphs, metrology, statistics

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Les Huntley, Les Huntley, Metrologist, Inc., Lewiston, ID 83501

Key words: measurement uncertainty, measurement errors,  
measurement system, calibration, testing

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150

Joseph F. St. Clair, Program Manager: Environmental Affairs, IBM  
Corporation, Austin, TX 78758

Key words: continuous improvement, performance measurement,  
safety, six sigma, statistical process control

M18 Harmonization of Government Agencies and the Transition to Commercial  
Specs (D/TC)  
Aviation/Space & Defense Division

*Harmonization of Government Agencies and the Transition to Commercial Specs*

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Frederick Gregory, Associate Administrator, Office of Safety and  
Mission Assurance, NASA Headquarters

Thomas E. McSweeney, Director, Aircraft Certification Service, Federal  
Aviation Administration

Richard S. Sapp, Corporate Director, Quality, Lockheed Corporation

Key words: government & industry harmonization, new direction of  
quality requirements, transition to commercial specs

M20 The Complete Integration of ISO 9000 and TQM (L)

*Leading Your Company to ISO 9001—Helpful Hints*

161

Mark Carter, Quality Manager, and Marsha Hosner, Quality System  
Administrator, ADS Environmental Services, Huntsville, AL 35805

Key words: audit, continuous improvement, ISO 9000, quality system,  
training



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Peter M. Malkovich, President, East Concord Associates, Edina, MN 55424

Key words: quality system, management, continuous process improvement

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Robert H. Moyer, Mogadore, OH 44260

Key words: project management, employee involvement, communication

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Luisa Deal, President, Training Support Network, La Jolla, CA 92037

Key words: facilitator, facilitating, team building, team meetings

*Ensuring Team Success in Continuous Improvement*

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Susan M. Heathfield, President, Heathfield Consulting Associates, Williamston, MI 48895-9406

Gregory M. Scheessele, Vice President, Manufacturing Operations, Gelman Sciences, Ann Arbor, MI 48103

Key words: cultural change, empowerment, leadership, management, work teams

*Assessing Team Productivity: A Case Study*

200

Susan M. Smyth, President, Smyth Management Resources, Cincinnati, OH 45208-2108

Key words: team, assessment, teamwork

**M22 Reducing Variation: A Prevention Initiative (ST)***Partition of Variation: A New Method for  $\sigma$  Reduction*

208

Thomas A. Little, Ph.D., C.Q.E., Director of Yield Improvement, and Kris Brekke, Process Characterization and Control Engineer, READ-RITE Corporation, Fremont, CA 94539

Key words: design of experiments, variation, problem solving

*Reducing Variation During Design*

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Wayne A. Taylor, Director Quality Technologies, Baxter Healthcare Corporation, Round Lake, IL 60073

Key words: robustness, six sigma, Taguchi methods, tolerances

M23 Quality Leadership—The Balancing Act Between Empowerment and Control (LE)

*Complexity, Categories and Leadership*

227

Neil Hardie, Senior Partner, Iona Consultancy, Northbridge, NSW  
2063, Australia

Key words: control, empowerment, leadership, values

M24 Hot Off the Quality Press (SI)

*No Paper Submitted*

Robert C. Camp, Xerox Corporation, Rochester, NY 14625

*Charismatic Leadership and Total Quality Management*

234

Stephen B. Knouse, Alvin and Patricia Smith Professor of  
Management, University of Southwestern Louisiana, Lafayette, LA  
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Key words: charismatic leadership, reward and recognition, strategic  
planning, vision, work force diversity

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Hank McHale, Ph.D., President/CEO, GO/DAN Industries, New Haven,  
CT 06513

Key words: self-managing work teams, manager control, management  
styles, cultural change

*Failure Mode and Effect Analysis (FMEA)*

246

D. H. Stamatis, Ph.D., C.Q.E., C.Mfg.E., Central Michigan University &  
Contemporary Consultants Co.

Key words: risk, improvement, system, design, process, service

M25 TQM Methodology Applied to the College Classroom (E)

*Do Process Improvement to Teach Process Improvement*

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L. Leslie Gardner, Assistant Professor, University of Indianapolis,  
Indianapolis, IN 46227

Panayiotis Georgiou, Student, Strovolos, Nicosia, Cyprus

Key words: assessment, education, problem solving, quality teams

*Using SDT's and Peer-Evaluation in College Courses*

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Michael J. Savoie, Ph.D., Executive Vice President, Integrated  
Resources Group, Inc., Metairie, LA 70005

Key words: coaching, education, peer evaluation, performance  
evaluation, self-managing work teams

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Zhiming Xue, Ph.D. Student, CPIM, School of Management, University  
of Massachusetts, Amherst, MA 01003

Charles S. Gulas, Assistant Professor of Marketing, College of Business  
and Administration, Wright State University, Dayton, OH 45435

Key words: continuous process improvement, education, statistical  
process control, total quality management

M26 Selected Topics on Quality in Construction (D/TC)  
Architectural/Engineering & Construction Division

- Quality + Safety = Productivity: The Implosion of Plant 7* 276

Larry Abernathy, Fernald Environmental Restoration Management  
Corporation, Cincinnati, OH 45246

Key words: construction, continuous improvement, engineering, U.S.  
Department of Energy, teamwork

- What To Do When TQM Fails: Symptoms and Remedies* 279

Clive Shearer, P.E., C.Eng., Management Consultant, Bellevue, WA  
98004

Key words: total quality management, continuous improvement,  
professional services

- Quality on the Boston Harbor Project* 282

Richard Stevenson, Construction Quality Department Manager, Stone  
& Webster Civil and Transportation Services, Inc., Winthrop, MA  
02152

Frank Westberg, Design Manager, Massachusetts Water Resources  
Authority, Boston, MA 02129

Kenneth Johnson, Resident Engineer, ICF Kaiser Engineers, Winthrop,  
MA 02152

Key words: public sector, waste water treatment plant, construction  
management, quality management, quality program

M27 Quality Costs and ISO 9000 (D/TC)  
Quality Cost Committee

- Quality Costs and ISO 9000* 290

G. Dennis Beecroft, Managing Director, Institute for Improvement in  
Quality and Productivity, University of Waterloo, Waterloo, ON,  
Canada, N2L 3G1

John C. Schottmiller, President, RM Consulting, Inc., Mendon, NY  
14506

Leo J. Braun Jr., PEKO Precision Products, Rochester, NY 14606

Jim Robison, QMX/Harrington Inc., Ormond Beach, FL 32176

Key words: cost of quality, Q90 series, quality audit, quality cost  
analysis

M28 Health Care Quality and Operational Results (D/TC)  
Health Care Division

*Developing a Balanced Set of Measures in Health Care*

293

Robert H. Lochner, Vice President of C.Q.I., Affinity Health Systems,  
Oshkosh, WI 54902

Key words: assessment, measurement, variation

*No Paper Submitted*

Thomas T. Reiley, Children's Hospital, Golden, CO 80401

*The National Committee for Quality Assurance: An Accountability  
System for Managed Care Organizations*

301

Randall K. Spoeri, Ph.D., Assistant Vice President, Performance  
Verification, National Committee for Quality Assurance,  
Washington, DC 20005

Key words: data quality, auditing, health care, HEDIS, measurement,  
report cards

M29 Transformations to Quality Organizations (SI)

*No Papers Submitted*

Marietta L. Baba, National Science Foundation, Arlington, VA 22230  
Benjamin Bethell, The Procter & Gamble Co., Cincinnati, OH 45202  
Pius Egbeba, National Science Foundation, Arlington, VA 22230

## TUESDAY, MAY 23, 1995

## T10 Attaining Excellence Through Innovative Metrics (L)

*Visible Measurement Systems Improve Performance* 310

L. Altyn Clark, Graduate Research Associate, and D. Scott Sink, Ph.D.,  
P.E., Professor and Director, The Center for Organizational  
Performance Improvement at Virginia Tech, Blacksburg, VA  
24061-0517

Key words: empowerment, hoshin planning, performance measurement,  
PDSA cycle, visible measurement/management system

*An Integrated Performance Management System: The Results of Managing a Business  
Through the Use of Assessment, Key Performance Indicators, and Benchmarking* 321

John D. Dickey, President, Quality Solutions, Inc., Cleveland, OH  
44140

George Morgan, General Manager, Quality, H.J. Heinz Company,  
Newport, KY 41071

Pedro Arevalo, General Manager, Alimentos Heinz, Caracas, Venezuela

Lionel Trebilcock, General Manager, EWPG, Litco International,  
Vienna, OH 44473

Key words: benchmarking, business quality assessment process  
(BQAP), key performance indicators (KPIs), measurement,  
strategic quality objectives

*Achieving Measurable Improvement in Service Management* 330

Paul A. Keller, Technical Services Director, Quality America, Inc.,  
Tucson, AZ 85710

Dr. George C. Runger, Consultant, Tucson, AZ 85715

Key words: management, service, Shewhart charts, metric, statistical  
process control (SPC), design of experiments (DOE)

*Building Healthcare Leadership* 338

Kersi F. Munshi, President, Munshi & Associates, Coral Gables, FL  
33134

José López-Calleja, Consultant, Continuous Improvement, Baptist  
Hospital of Miami, Miami, FL 33156

Key words: company-wide quality control (CWQC), continuous  
improvement process (CIP), health care, leadership, policy  
deployment, process management, total quality management  
(TQM)

## T11 Team Development for Implementing Statistical Tools (E)

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George P. Eckes, Principal Consultant, E&amp;A Inc., Louisville, CO 80027

Carolyn Orr, Manager, Development Programmes,

SmithKlineBeecham Pharmaceuticals, Worthing West Sussex

England BN 14 8QH

Key words: design of experiments, program development, train the trainer (training)

*Getting Statistical Tools to the Masses: Common Problems in Training Design and Execution* 356

Lynda M. Finn, Casey A. Garhart, and Susan E. Reynard, Joiner

Associates Inc., Madison, WI 53705-0445

Key words: instructional design, statistical tools, training

*Creating Experimenters by Design* 365

Michael T. Schneider, Chief Specialist, Supplier Management &amp;

Procurement, McDonnell Douglas Corporation, St. Louis, MO

63031

Key words: continuous improvement, design of experiments (DOE), Taguchi method, training

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*New Approach to Process Control* 367

Zigmund Bluvband, Ph.D., President, Advanced Logistics

Developments, A.L.D. Ltd., Rishon Lezion, 75106, Israel

Pavel Grabov, Ph.D., and Dov Ingman, Ph.D., Quality Assurance &amp;

Reliability, Technion—Israel Institute of Technology, Haifa,

32000, Israel

Key words: capability study, control charts, pooled chart, stability, statistical process control (SPC), statistical quality control (SQC), Taguchi method, uniformity

*A Control Chart for Attributes and its Applications* 378

Leonard B. Quarshie, Ph.D., and Hisakazu Shindo, Associate Professor,

Yamanashi University, Kofu Yamanashi, Japan

Key words: mixed states, beta-binomial distribution, V Statistic, inter- and intra-subgroup variation

## T13 The Foundation of TQM (L)

*Continuous Improvement Lessons Learned: A Foundation for Change* 389

Daniel Dolan, Principal, Dolan Consulting, Schaumburg, IL 60195

Marc Widdis, Director of Quality, Reliable Power Products, Franklin

Park, IL 60131

Key words: business planning, education, assessments, coaching



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Stephen K. Hacker, Senior Research Assistant, Virginia Quality & Productivity Center, Blacksburg, VA 24061-0118

Joseph G. DeMarco, Jr., Public Relations Manager, Procter & Gamble Paper Products, Mehoopany, PA 18629-0032

Key words: behavior modification, community quality improvement, leadership, teams

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Ranbir Sarkar, Assistant Manager—Quality Assurance, Siemens Limited, Bombay 400 018, India

Key words: culture, competitive strategy, human resource management, strategy integration, total quality management

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Joseph P. Sener, Senior Associate, SWI • Svenson & Wallace, Inc., Naperville, IL 60563

Key words: ISO 9000, quality management

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George Lofgren, President, Paul Fortlage, Vice President, and Barbara Stranak, Administrator, Registrar Accreditation Board, Milwaukee, WI 53202

Robert W. Peach, Robert Peach & Associates, Cary, NC 27511-3802  
Donald Marquardt, Donald Marquardt & Associates, Wilmington, DE 19803-5111

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John H. Stratton, Quality Systems Consultant, Eastman Kodak Company, Rochester, NY 14652-4603

Key words: accreditation, certification, quality management system registration, Registrar Accreditation Board, registration

**T15 Quality in Sales—The Last Frontier (IS)*****Quality in Sales—The Last Frontier*** 434

Daniel M. Stowell, President, D.M. Stowell & Company, Southbury, CT 06488-1207

Key words: customer satisfaction, marketing, planning, process, teams

**T16 International View of Quality (D/TC)**  
**International Chapter**

*An International View of What Works and What Doesn't Work*

438

Dr. H. James Harrington, President, International Academy for Quality,  
Principal, Ernst & Young, San Jose, CA 95113

Key words: baseline study, computer, automotive, economic value,  
International Quality Study, international, management

*Quality Progress—A European View*

448

John G. Roche, Ph.D., Director, Quality Assurance Research Unit,  
Department of Industrial Engineering, University College, Galway,  
Ireland

Key words: education, European quality organizations, origins, recent  
developments

**T17 Auditing—The Culture, Structure and Organization (D/TC)**  
**Quality Audit Division**

*ISO 9000 Based Audit Program*

457

L. B. (Wilt) Feider, Quality Systems Manager, AT&T Global  
Information Solutions, Roseville, MN 55113

Key words: charter, documentation, schedule, report, review

*Human Elements of Audit Program Implementation*

465

David Stevenson Huyink, CQA, Quality Systems Director, Network  
Systems Corporation, Minneapolis, MN 55428

Key words: culture change, human relations, internal audit, ISO 9000,  
quality system

*Partnering and Continuous Improvement with Second Party Quality  
Assessments in the Semiconductor Industry*

469

John Schuler, Manager, Quality and Organizational Systems, SEMI

Key words: assessment, customer-supplier partnership, ISO 9000,  
partnering, quality system, Sematech, SEMI, semiconductor  
industry

**T18 Quality Management for Energy & Environmental Issues (D/TC)**  
**Energy & Environmental Quality Division**

*Quality Management Tools in the EPA Quality System*

475

Gary L. Johnson, Senior Manager, Quality Assurance, U.S.

Environmental Protection Agency, Research Triangle Park, NC  
27711

Key words: human resources, quality management, quality system,  
tools of quality, training

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George W. Roberts, Manager, Quality Assurance, Property and Security, McDermott/Babcock & Wilcox, Alliance, OH 44601

Key words: research and development, TQM, continuous improvement, technology

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Kathleen S. Swartz, Quality Systems Manager, Bechtel Corporation, San Francisco, CA 94119-3965

Key words: continuous improvement, customer satisfaction, feedback, goals, incentives, leadership, performance measurement

**T19 Product Liability Costs and Quality: Efforts (D/TC)**  
**Product Safety & Liability Prevention Technical Committee****A New Frontier for Quality: Product Liability** 495

Randall Goodden, Everbrite, Greenfield, WI 53220

Key words: lawsuits, legal actions, product liability, reliability, prevention, risk management

**Products Liability & Total Quality Management** 502

Joseph J. Lutz, President, J.J. Lutz/Consulting, Milwaukee, WI 53202

Richard J. Lutz, Esq., Attorney, Koren, Bertell & Hoey, Buffalo, NY 14202

Key words: empowerment, products liability, teams, total quality management

**ISO 9000 and Product Liability** 509

Gregory G. Scott, Esq., and Sheila T. Kerwin, Esq., Popham, Haik, Schnobrich & Kaufman, Ltd., Minneapolis, MN 55402

Key words: ISO 9000, product liability, prevention, certification, legal actions, documentation

**T20 Quality Through Reengineering and Continuous Improvements (L)****Do It Right the Second Time** 515

Peter Merrill, Managing Partner, Quest Management Services, Toronto, Ontario, M2M 2S9, Canada

Key words: vision, continuous improvement, leadership, process management, empowerment

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Jerry Paradis, Director, ISO 9000 Services, Information Mapping, Inc.,  
Waltham, MA 02154  
Key words: communication, documentation, empowerment, ISO 9000,  
management, policies & procedures
- Reengineering: A Systems Approach* 532  
David L. Stoner, Ph.D., Manager, Continuous Improvement, Loral  
Space Information Systems, Houston, TX 77380  
Penny Greenwood, H.J. Steudel and Associates, Madison, WI 53719  
Key words: change management, strategic planning, systems thinking
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Al Crispo, Assistant Professor, Purdue University, West Lafayette, IN  
47907  
Key words: coaching, culture change, leadership, motivation,  
teamwork
- Empowerment Operationalized* 547  
Harold S. Haller, Ph.D., Harold S Haller & Company, Cleveland, OH  
44145  
Key words: empowerment, quality management, self-managing work  
teams, time management, work teams
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David W. Mann, Ph.D., Senior Manager, Organization Development,  
Steelcase, Inc., Grand Rapids, MI 49501-1967  
Key words: communication, empowerment, management, pitfalls,  
teams
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Carol Rush, Quality Advisor, Intalco Aluminum Corporation, Ferndale,  
WA 98248  
Key words: cooperation, parameter, partnership, unions

## T22 Applying SPC in Food Processing and Healthcare (ST)

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James C. Benneyan, Industrial Engineering/Operations Research,  
University of Massachusetts, Amherst, MA 01003

Frank C. Kaminsky, Principal, Productivity Sciences Incorporated,  
Greenfield, MA 01301

Key words: epidemiology, health care, laboratory, liability, medical,  
statistical process control

*Using SPC in Two Mexican Poultry Processing Plants* 579

José M. Elizundia, Q.A. Consultant, Gómez Palacio, Dgo. México  
Guadalupe Hau, Q.C. Coordinator, UNIVASA, Mérida, Yuc. México

Key words: Coatzacolacos, Free Trade Agreement, Mérida, poultry  
processing plant, statistical process control

*Effective Use of Control Charts in Food Processing* 588

Robert L. Perry, The Pillsbury Company, Minneapolis, MN 55414

Key words: control charts, SPC, variation

## T23 TQM: Philosophy—Leadership—Application (L)

*Integrated QA Systems: Marrying Core QA Systems and TQM Philosophies* 597

Kenneth G. Fellers, Manager of Quality Assurance, Johnson Controls  
World Services Inc., Los Alamos, NM 87544

Key words: core systems, quality assurance/quality control (QA/QC),  
total quality management (TQM)

*Doubling Research's Productivity Using TQM* 601

Jerry D. Holmes, Ph.D., Vice-President, Research, and David J.  
McClaskey, PE, Quality Management Coordinator, Eastman  
Chemical Company, Kingsport, TN 37662

Key words: management leadership, management, productivity,  
productivity improvement in research, research, research and  
development, results, TQM in research

*Total Quality Through Leadership* 607

Anil K. Rastogi, Chief Operating Officer, and Ashweni Sahni, Director,  
Quality Systems, SIMS Deltec, Inc., St. Paul, MN 55112

Key words: leadership, vision, total quality, reengineering, customer  
focus, teamwork

## T24 Koalaty Kid Continues to Improve (SI)

*No Papers Submitted*

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Mary Jo Taylor, Principal, Sally Searl, Christine Holden, Teachers,  
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## T25 Break Out of Your Rut! Creative Thinking in TQM (IS)

*Break Out of Your Rut! Creative Thinking in TQM*

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Terry Ehresman, TQM Consultant and Trainer, Spectrum, Inc.,  
Wichita, KS 67212-6302

Key words: problem solving, process improvement, training

T26 Solving Problems Through Inspection (D/TC)  
Inspection Division*Solving Problems Through Inspection*

616

Frank Cullen, Chuck Carter, Hardy M. Cook, Navin Dedhia, IBM-ADSTAR,  
Elmer Gookins and Bob Vincent, General Plug, Bruce Johnson,  
Microwave Development Labs, Shirley Ward, Bundy Corporation

Key words: inspection, sampling, teamwork, problem solving, human  
factors

*Self-Inspection Implementation: Beyond the Rhetoric*

618

August H. Ziegler, Supervisory Engineer-Field Quality Assurance,  
Westinghouse Electric Corporation, Baltimore, MD 21203

Key words: business process, effectiveness, rework, total quality  
management, training

T27 Customer-Supplier Relations: A Study in Contract Breakdown (D/TC)  
Customer-Supplier Division*Customer-Supplier Relations: A Study in Contract Breakdown*

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Guimar F. Andrade, Product Assurance Manager, Panametrics, Inc.,  
Waltham, MA 02154

Lesley J. Enos, Principal, and Harold P. Greenberg, Principal, The ISO  
9000 Network, Framingham, MA 01701

Key words: customer-supplier relationships, partnership, ISO 9000,  
contract review



**T28 The People Side of Quality Control (D/TC)**  
**Human Resources Division**

*Quality Through Commitment: Increasing Involvement and Innovation* 639

John Cramton, Training & Development Associate, Heidi H. Cofran,  
Human Resources Associate, Rich Buckingham, Liz Crowley,  
Heidi Schultz, Mark Stutman, and Bruce Troutman, W. L. Gore &  
Associates, Inc., Newark, DE 19711

Key words: culture, teams, freedom, leadership

**T29 So Now What?—Solutions (D/TC)**  
**Service Industries Division**

*No Paper Submitted*

Stephen Gift, Telecommunications Service of Trinidad & Tobago,  
Trinidad, West Indies

*TQM Where You Live—Measuring the Quality of Life* 641

Jeffrey W. Jackson, Executive Director, Washtenaw Quality  
Improvement Network, Ann Arbor, MI 48103

C. Philip Alexander, President, Ann Arbor Consulting Associates, Ann  
Arbor, MI 48103

Key words: community quality improvement, community relations,  
quality of life

*Tying Customer Satisfaction to Strategic Planning* 650

Sheila Kessler, President, Competitive Edge, Fountain Valley, CA  
92708

Key words: customer satisfaction, measuring customer satisfaction,  
strategy, customer-driven strategy, results, profit and customer  
satisfaction

*Integration of Quality and Business Planning* 653

Kevin L. Miller, CQE, CRE, Internal Consultant, Quality Resources,  
U.S. Tennessee Valley Authority, Knoxville, TN 37902

Key words: business plans, hoshin planning, quality improvement  
system, priority setting

*Simulation-Animation: Improving Service Systems* 661

Daniel Villareal, Director, DVA Consulting Group, Monterrey, NL,  
64620, Mexico

Key words: business process, continuous improvement, service,  
simulation

## T30 Involvement Through Leadership and Empowerment (L)

*Process Based Management at US WEST*

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Hugh Grove, DBA, CPA, Accounting Professor, University of Denver, Denver, CO 80208

Key words: continuous improvement process (CIP), empowerment, process management, reliability, software

*Employee-Driven Quality: An Empowering Approach to Outdated Suggestion Systems*

675

Robin E. McDermott, Director of Training, Resource Engineering, Inc., Tolland, CT 06084

Key words: suggestion programs, employee involvement, empowerment, project teams, total quality management

*Effective Vision Deployment: An Actual Case Study*

682

Thomas M. Piper, Quality Management Coordinator, Chevron Chemical Company, Houston, TX 77010

Jack W. Steele, Executive Vice President, Competitive Technologies International, Inc., Tequesta, FL 33469

Key words: strategy, policy deployment, problem solving, implementation, data collection

## T31 Proven Strategies to Change Culture Through Empowerment (E)

*Breakthrough Improvements in Quality and Climate*

692

Herbert A. France, Senior Consultant, Rath & Strong, Inc., Lexington, MA 02173

Steven E. Crom, Principal, European Operations, Rath & Strong, Inc., 28359, Bremen, Germany

Key words: breakthrough improvement, cultural change, employee teams, management involvement, structured approach

*Capturing Reality: Key to Employee Empowerment*

699

Rodney C. Vandever, Assistant Professor, Purdue University, West Lafayette, IN 47907-1420

Key words: daily schedule control, empowerment, training

*Self-Directed Teams at U.S. Gauge—A Case Study*

707

Hay Wun Wain, Corporate Director of Total Quality Management, AMETEK, Inc., Pittsburgh, PA 15238

Patrick M. O'Connor, Divisional Vice President, Operations, AMETEK, U.S. GAUGE DIVISION, Sellersville, PA 18960

Key words: empowerment, teams, total quality management

## T32 Novel Analysis Techniques with Quality Applications (ST)

*Process Improvement Utilizing Computer Simulation: Case Study* 713

DeAnn Anderson, Head of Quality Management, Frank Abetti,  
Manager, Business Process Improvement, and Phillip Savage,  
Operations Research Consultant, Aetna Health Plans, Middletown,  
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Key words: simulation, modeling, querying, test-bed, redesign, baseline

*An Integrated Scheme for Process Monitoring and Diagnosis* 725

Shing I. Chang, Assistant Professor, Kansas State University,  
Manhattan, KS 66506

Key words: cause-and-effect diagram, neural network, process control,  
statistical process control

*Reliability Reports—Product, Customer, and Process* 733

John A. Conte, P.E., Manager, Quality and Reliability Metrics, DSC  
Communications Corporation, Plano, TX 75075

Key words: failure rates, reliability, reports, statistical measure,  
telecommunications

*Quantal Response Analysis of Relief Valve Test Data* 741

John H. Sheesley, Lead Statistical Scientist, Harold W. Thomas, Lead  
Safety Engineer, and Carlos A. Valenzuela, Manager of Statistical  
Sciences, Air Products and Chemicals, Inc., Allentown, PA 18195

Key words: censored data, data analysis, failure rate, probability,  
density, pressure relief valve, quantal response, regression,  
reliability, testing, Weibull Distribution

## T33 Teamworking Requires Quality Too (L)

*Process Redesign Involving Management and Union Representatives* 749

Roger G. Carpenter, Project Manager, Customer Service, Tennessee  
Valley Authority, Cleveland, TN 37311

Key words: cycle time, labor relations, process improvement, service  
organizations, teams, unions

*Mission, Vision, Goals Are Set—Then What: ODB—Opportunity Database* 756

Mark S. Lisinski, Director of Quality Management & Strategic  
Planning—APG Customer Service, Andersen Consulting, Chicago,  
IL 60602

Key words: communication, employee involvement, process  
improvement, strategy, teams

*Teamworking Through ISO 9000—A Reality*

762

Dr. Avinash Kumar Srivastav, Executive Director (Quality & HRD), ITI Limited, Bangalore—560 001, India

Key words: collaboration, impact of ISO 9000, organizational ethos, teams

*Quality Tools Help Improve Employee Commitment*

770

Robert B. Turner, Quality Improvement Coordinator, and Lorne S. Zipursky, Environmental Engineer, Chevron Chemical Company, San Ramon, CA 94583

Key words: commitment, data analysis, quality function deployment (QFD), regression analysis, vision

## T34 Quality and Global Business (SI)

*No Papers Submitted*

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Bruce Hayes, Motorola University, Schaumburg, IL 60173

## T35 Synthesis of Quality Leadership Elements (IS)

*Many Gurus, One Problem: A Case Study*

777

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Key words: problem solving, quality gurus, robust process, strategy

T36 QS-9000: Automotive Quality System Standards (D/TC)  
Automotive Division*QS-9000 and Automotive Quality*

782

Peter B. Lake, President, SRI Quality System Registrars, Wexford, PA 15090

Tripp Martin, Peterson Spring, Southfield, MI 48086

Jeff Pett, Vice-President, Corporate Quality, Prince, Holland, MI 49423

Key words: automotive, ISO 9000, quality audit, registration

**T37 Statistical Thinking for Business Improvement (D/TC)**  
Statistics Division

*Statistical Thinking for Business Improvement*

787

Lynne Hare, Harrington Park, NJ 07640

Roger W. Hoerl, Quality Methods & Information Manager, Scott Paper Company, Philadelphia, PA 19113

Ronald D. Snee, Senior Consultant, Joiner Consultants, Newark, DE 19711

**Key words:** adult and continuing education, statistical based management

**T38 Solving Quality Issues for the Food & Drug Industries (D/TC)**  
Food, Drug & Cosmetic Division

*IPEC GMP Guide for Bulk Pharmaceutical Excipients*

789

Ofelia U. Barretto, Director, Corporate Quality Assurance, Nutrilite Products, Incorporated, Buena Park, CA 90622-5940

**Key words:** Food and Drug Administration (FDA), food and drug industry, good manufacturing practice (GMP)

*TQM and the Analytical Food Laboratory*

791

Kurt E. Deibel, Corporate Microbiologist, and Harry Leichtweis, Senior Research Analytical Chemist, General Mills, Inc., Minneapolis, MN 55427

**Key words:** analytical laboratories, food analysis, GLP, total quality management (TQM)

*EU Medical Devices Directives and Their Implementation*

794

Dr. James W. Kolka, International Legal Consultant, *The Complete European Trade Digest*, Atlanta, GA 30342-2511

**Key words:** CE Mark, conformity assessment, European Union, Medical Device Directive, ISO 9000

*NDA/ANDA Pre-Approval Inspection Program*

797

Robert Sharpnack, Investigator, Food and Drug Administration, Cincinnati, OH 45202

**Key words:** Food and Drug Administration (FDA), food and drug industry

*Quality Systems for Food Processing Companies*

799

John G. Surak, Department of Food Science, Clemson University, Clemson, SC 29634-0371

**Key words:** food and drug industry, food products, ISO 9000, quality management, quality system

T39 Approaches to Assessment of Educational Programs and Institutions (D/TC)  
Education Division

*Higher Education Quality Assessment: Seeking Common Ground* 802

Henry J. Lindborg, Ph.D., Executive Director, National Institute for  
Quality Improvement, Fond du Lac, WI 54935

Key words: accreditation, assessment, education, evaluation, total  
quality management (TQM)

*Assuring Worker Performance Through Worker Assessments* 805

Arnold J. Quakkelaar, PE, CSE, Manager, Learning Services—Controls  
Group, Johnson Controls, Inc., Milwaukee, WI

Key words: employee development, field training, "JIT" training (just  
in time), performance improvement, self-directed learning,  
training, training assessments, worker performance

*1995 Malcolm Baldrige National Quality Award Education Pilot Program* 809

Dale O. Richards, Professor Emeritus, Brigham Young University,  
Provo, UT 84602

Key words: Baldrige, education criteria, eligibility, scoring

*Quality K-6 Education Koalaty Style* 810

F. Leroy Walser, EdD, Director, Center on Standards for Quality,  
University of Oklahoma, Norman, OK 84072

Key words: continuous improvement, Koalaty Kid, process  
improvement, quality philosophy, quality tools, school turnaround,  
student learning

T40 Successful Supplier Partnering and Management (L)

*Suppliers Base, Customer Satisfaction's Element: How a Medium Size Manufacturer  
Is Creating a Suppliers Base* 816

Norma H. Antunano, Procurement Engineering, ADFlex Solutions, Inc.,  
Chandler, AZ 85224

Key words: customer's designee suppliers, designer, suppliers  
selection, strategy

*A Cross Functional Approach to Supplier Evaluation* 825

Gary R. Spooner, Director of Q.A. & Planning, and David W. Collins,  
Manager of Supplier Development and Manufacturing Quality,  
Walker Manufacturing, Jackson, MI 49201

Key words: communication, evaluation, recognition, supplier  
partnerships, vendor/product evaluation/certification



## T41 Quality in Health Care: Learning and Improving (E)

*Organizational Diagnosis: A Healthcare Experience of BPR*

833

Dr. Uche Nwabueze, Professor D. S. Morris, and Professor R. H. Haigh,  
Policy Research Centre, Sheffield Business School, Sheffield  
Hallam University, Sheffield, UK

Key words: quality, National Health Service, TQM, business process  
redesign, implementation

*Teambuilding in a Health Care Environment*

840

Scott L. Wangen, Vice President, CIT Group, Inc., Macon, GA 31208-  
6913

Richard A. Yates, Director, Quality, 78th Medical Group, Robins AFB,  
GA 31098-2227

Key words: communications techniques, human relations, management  
styles, quality teams, work teams, teamwork

## T42 Integrating TQM and Business Strategies (L)

*Business Strategy and Total Quality Management: Stages on the Way to Total Integration* 847

Luis Ma. R. Calingo, School of Accountancy and Business, Nanyang  
Technological University, Republic of Singapore

Key words: hoshin planning, policy deployment, strategic planning,  
total quality management (TQM)

*Achieving Alignment and Improvement Through Integrated Business Planning*

856

Gary M. Vansuch, Manager of Quality, U.S. Tennessee Valley  
Authority, Chattanooga, TN

Key words: planning, hoshin planning, critical success factors

## T43 Next Steps in Control Charts and Quality Information Systems (LE)

*HyQIS: Hypertext Quality-Information-System*

864

Albert Neumann, Laboratory for Machine Tools and Production  
Engineering, University of Technology Aachen, 52062 Aachen,  
Germany

Key words: computer supported collaborative work (CSCW), failure  
mode and effect analysis (FMEA), ISO 9000, quality function  
deployment (QFD), software

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Su-Fen Yang, Graduate Institute of Statistics, National Chengchi  
University, Taipei, 116, Taiwan, ROC  
Key words: assignable causes, renewal reward processes
- T45 The American Customer Satisfaction Index (SI)  
  
*No Papers Submitted*  
Claes Fornell, Donald C. Cook Professor of Business Administration,  
University of Michigan, Ann Arbor, MI 48109-1234  
David Larcker, Professor of Accounting, Wharton, Philadelphia, PA  
19104
- T46 Quality Systems in the World Community (D/TC)  
Biomedical Division  
  
*FDA Enforcement and the Good Manufacturing Practice Regulations for Medical  
Devices: A Happy Marriage* 879  
Mark S. Brown, King & Spalding, Washington, D.C. 20006  
Key words: FDA enforcement, GMPs, FDA 483, complaint, failure  
investigation
- ISO 9001—On the Road to World Class Quality Systems* 881  
Steve Wirkus, Ph.D., Advanced Cardiovascular Systems, Inc.,  
Carlsbad, CA 92008  
Key words: ISO 9000, certification, quality manual, European  
Community, pre-assessment, ISO checklist
- T47 Quality in the Public Sector Through Union Management Partnership (D/TC)  
Public Sector Network Technical Committee  
  
*Quality Services Through Partnership* 886  
Paul Goldberg, Executive Director, Ohio Civil Service Employees  
Association (OCSEA), Columbus, OH 43215  
Steve Wall, Executive Director, Ohio Office of Quality Services,  
Columbus, OH 43215  
Key words: public sector, quality management, union/management  
partnership

- T48 Software Metrics That Meet Your Information Needs (D/TC)  
Software Division

*Software Metrics That Meet Your Information Needs*

889

Linda L. Westfall, Principle, Software Measurement Services, Plano,  
TX 75075

Key words: data analysis, data collection, measurement, reports,  
software

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## W10 Case Studies in ISO 9000 (L)

- The ISO 9000 Journey of Small and Medium-Sized Hong Kong Manufacturing Industries* 898  
Kwai-Sang Chin, Richard Ching-Man Yam, and Kit-Fai Pun,  
Department of Manufacturing Engineering, City University of Hong  
Kong, Kowloon, Hong Kong  
Key words: ISO 9000, quality system, SMI
- ISO 9000 Methodology Enhances Ergonomics Effort: Ergonomics Becomes a Tool  
for Continuous Improvement* 904  
Robert L. Getty, Ph.D., CQE, CPE, CM, Manager, Industrial  
Ergonomics, and W. Leon Abbot, Ph.D., CM, Human Resources  
Specialist Senior, Lockheed Fort Worth Company, Fort Worth, TX  
76101  
Juliet M. Getty, Ph.D., Assistant Professor, University of North Texas,  
Denton, TX 76103  
Key words: continuous improvement, ergonomics, ISO 9000, OSHA,  
safety improvement program
- Using ISO 9001 to Improve the Quality of R&D* 914  
Robert Jenkins, Senior Quality Engineer, Rayonier Research Center,  
Shelton, WA 98584  
Key words: continuous improvement, corrective action, internal audit,  
quality system, registration
- ISO 9000 in IBM—Strategy and Approach* 922  
Dr. Jack E. Small, ISO 9000 Director, IBM Corporation, Armonk, NY  
10504  
Key words: cooperation, employee involvement, empowerment,  
process management, registration

## W11 Application of TQM Tools to the Training Function (E)

- A New Training Approach for ISO 9000* 927  
Rita Grenville, ISO 9000 Consultant, DuPont ISO 9000 Services,  
Wilmington, DE 19898  
Fredric H. Margolis, Management Consultant, Potomac, MD 20854  
Key words: andragogy, discovery learning, experience-based, ISO  
9000, pedagogy, training

***Training Function Deployment: A New Approach for Designing and Evaluating Employee Development Programs*** 933

John O. Stampen, Vice President Retail Banking & Marketing, Home Savings Bank, Madison, WI 53703

Jacob O. Stampen, Professor of Education Administration, University of Wisconsin-Madison, Madison, WI 53706

**Key words:** education, human resources, job analysis, quality function deployment

***Using Systematic Methods to Solve a Soft Problem*** 947

Douglas J. Wreath, Programs Director, Wreath Group, Springfield, VA 22151

**Key words:** empowerment, TQ (total quality), methodologies

**W12 Optimization and Improvement of Products/Processes Through DOE (ST)**

***Improving Fabric Finishing Through Experimental Design*** 952

Noel Artiles-León, Associate Professor, Industrial Engineering Department, University of Puerto Rico, Mayagüez, PR 00681-5000

Clara M. Novoa-Ramírez, Quality Manager, and Carolina Domenech, Quality Engineer, Hanes Menswear, Inc., Ponce, PR 00731

**Key words:** data analysis, design of experiments, optimization, quality loss function, regression analysis

***Injection Molding Optimization Through DOE*** 963

José R. Deliz, University of Puerto Rico, Mayaguez, Puerto Rico, 00681

Indhira Caraballo, Vila Del Corral & Co., San Juan, Puerto Rico, 00922-0528

**Key words:** design of experiments, fractional factorials, quality improvement

**W13 Building a Sustainable Quality System (L)**

***A Quality Department Surveys Its Customers (Or, Shoes for the Cobbler's Children)*** 970

Charlie R. Bourquin, Member of Technical Staff, AT&T Atlanta Works, Norcross, GA 30071

**Key words:** customer-supplier, customer survey, internal customer, quality management

***Use of Successful Internal Baldrige Assessments: Well-Defined Approaches for Differing Company Needs*** 977

Jackie Kennett, ECP Total Quality Manager, Texas Instruments—IS, Plano, TX 75086

**Key words:** Baldrige Award, assessment, total quality management, internal audit

*Auditing for Compliance and Effectiveness*

988

Kevin T. Kimmel, Principal Consultant, Management Systems and Support Services, Reading, PA 19606

Key words: assessment, audit, effectiveness, internal audit, quality audit

*TQM/ISO 9000/SPC: Why Do Systems Fail?*

996

Subhash C. Puri, Consultant, Standards-Quality Management Group, Nepean, Ontario, Canada, K2H 8Y8

Key words: ISO 9000, paradigm, process improvement, quality system, total quality management

## W14 Community Quality Councils—Introduction and Discussion (SI)

*No Papers Submitted*

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Jan P. Partain, Arkansas Industrial Dev. Comm., Little Rock, AR, 72201

Myron Tribus, Fremont, CA 94539

## W15 Surprising Roads to Customer Loyalty (IS)

*Surprising Roads to Customer Loyalty*

1003

Dr. A. Blanton Godfrey, Juran Institute, Inc., James J. Rooney, Process Safety Institute, Laura Gregg, Wizard Textware, Dr. A. H. (Jack) West, Westinghouse Electric Corporation, William R. Garwood, Eastman Chemical Corporation

Key words: customer loyalty, customer focus, customer-supplier, teamwork, high performance organization

## W16 Visual Language: A Tool for Cross-Functional Teams (IS)

*Visual Language: A Tool for Cross-Functional Teams*

1007

Larry Raymond, Director, Visual Language Research Center, Newbase International, Andover, MA 01810-2114

Key words: business process design, cross-functional teams, high involvement, creativity, teamwork



**W17 Seamless Integration of Quality Efforts—Sorting the Quality Alphabet Soup!**  
(D/TC)

Chemical & Process Industries Division

*Integrating PACE and Quality Technology: Making Quality and Statistical Tools an  
Integral Part of a Stage-Gated Product & Process Development Methodology* 1011

Kymm K. Hockman, Sr. Consulting Statistician, DuPont Quality  
Management & Technology, Wilmington, DE 19808-0320

Key words: business process, design of experiments (DOE), integrated  
solution, ISO 9000, process qualification, quality function  
deployment (QFD)

*Integrating ISO 9000 into an Internal Baldrige Audit* 1018

Daniel H. Pearl, Excel Partnership, Inc., Sandy Hook, CT 06482

Key words: audit, Baldrige, continuous improvement, ISO 9000

**W18 Future Insights in Reliability Development and Applications (D/TC)**  
Reliability Division

*Cost Effective Calibration Intervals Using Weibull Analysis* 1026

H. Paul Barringer, P.E., Barringer & Associates, Humble, TX 77347-  
3985

Key words: calibration intervals, Weibull analysis, risk/benefit cost  
analysis, instrument reliability

*Optimization of Reliability Verification Test Strategies* 1039

Bryan Dodson, Senior Reliability Engineer, ITT Automotive, Auburn  
Hills, MI 48326-2356

Key words: reliability, automotive, economics, optimization, testing

*Uncertainty Calculi for Fault Trees* 1046

David P. Weber, Weber Systems, Maineville, OH 45039

Key words: fuzzy fault tree, fuzzy Weibull

**W19 Ensuring that the ISO 9000 Standards Add Value to Your Organization (D/TC)**  
Standards Committee

*How Manufacturers Benefit from ISO 9001* 1054

Charles A. Cianfrani, Director, Corporate Quality, Elsag Bailey, Inc.,  
Warminster, PA 18974

Key words: benefits, ISO 9001, Q9000 series, quality system, quality  
management

- The Missing Linkage in ISO 9001: What's Being Done About It?* 1056  
Donald W. Marquardt, Donald W. Marquardt and Associates,  
Wilmington, DE 19803

Key words: continual improvement, design control, documentation,  
objectives for quality, statistical techniques

- Auditor Consistency: What Improvements Are Underway?* 1064  
John H. Stratton, Quality Systems Consultant, Eastman Kodak  
Company, Rochester, NY 14652

Key words: ISO 9000, quality system audit, Registrar Accreditation  
Board (RAB)

W20 A New Business Strategy: Customer Centered Culture (L)

- Changing Cultures by Changing People—A Business Strategy* 1066  
Sandra J. Bond, TQM Coordinator, Winchester Division, Olin  
Corporation, East Alton, IL 62024

Thomas W. A. Otley, Mgr. of Product Development, Dale Carnegie &  
Associates, St. Louis, MO 63132

Key words: training, total quality management (TQM), employee  
survey, communication, leadership, stress management

- Focusing on the Customer: Today's Key Management Imperative* 1072  
Joseph M. Feliu, Manager, Information Systems Service Center, U.S.  
Postal Service, San Mateo, CA 94497-9200

Key words: customer satisfaction, partnership, employee involvement,  
customer service, measurement

- VSTPs: A New Tool for Making Quality Decisions* 1080  
David L. Hankin, Principal, DLH Consulting Services, Los Altos, CA  
94024

William Waylett, Senior Vice President, Fleet Corporate  
Administration, Johnston, RI 02919

Key words: communications techniques, decision making, evaluation,  
service organizations

W21 Making Quality Pay (L)

- Achieving Value Through Activity-Based Costing* 1088  
Douglas W. Webster, Ph.D., Principal, American Management  
Systems, Inc., Arlington, VA 22209

Key words: ABC, ABM, activity-based management, cost management

*Gaining Rapid Payback from Continuous Improvement*

1098

R. W. Zeiler, Director of Operations, The Kipp Group, Ontario, CA  
91761

Key words: continuous improvement, early success, employee involvement, ten-fold improvement, illness and injury prevention, worker's compensation costs

## W22 Short Run SPC, Process Capability, Measuring Systems—"Catch 22" (ST)

*How to Deal with the Process Capability "Catch-22"*

1105

Steven P. Bailey, Senior Consultant, DuPont Engineering, Wilmington, DE 19898

Key words: automatic process control (APC), process capability, process performance, statistical process control (SPC), variation

*Adjusted Individual Control Charts for Short Runs*

1117

Larry D. Haugh, Ph.D., Director, Statistics Program, University of Vermont, Burlington, VT 05401-1455

Andrew D. Pond, M.S., Technician, IBM Corporation, Essex Junction, VT 05452

Key words: regression analysis, standardized control charts, stratified control charts, average run length (ARL), mask registration

*Implementing a Quality Measurement System*

1126

Elton T. Pollock, President, ET Consulting, Ft. Walton Beach, FL 32547

Key words: metrics, quality measurement

## W23 Quality Management Models (LE)

*Three Dimensional Modeling of Quality Concepts*

1134

CDR William E. Casey, USN, CQE, Repair Officer, Supervisor of Shipbuilding, Conversion and Repair, Newport News, VA 23607

Key words: quality improvement system, consensus, control chart, tools of quality, variation reduction

*Empowerment: A Re-Conceptualization*

1142

Mary Mannion Plunkett, Ph.D., Renton, WA 98055

Key words: cultural change, motivation, policy deployment, regression analysis

## W24 ASQC Training Relevance to Business Results (SI)

*No Papers Submitted*

Dennis R. Arter, Columbia Audit Resources, Pasco, WA 99301-5512

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Michael W. Smith, Software Quality International, Claremont, CA  
91711-5243

## W26 Empowerment Using the Information Warehouse (D/TC)

Computer Information Systems Technical Committee

*Empowerment Using the Information Warehouse*

1149

Randy Bentencort, Marketing Analyst, SAS Institute, Inc., Cary, NC  
27513

Louise Pinter, Survey Researcher, AFLAC, Columbus, GA 31999

William Voegeli, Vice President, CSM, Inc., Marietta, GA 30066

Key words: data processing, information management, productivity

## W27 Effective Use of Teams in Continuous Improvement (D/TC)

Textile & Needle Trades Division

*Effective Use of Teams in Continuous Improvement*

1151

Cliff L. Seastrunk, Director, Extension & Applied Research, College of  
Textiles, N.C. State University, Raleigh, NC 27695-8301

Roy H. Johnson, Ph.D., President, Progressive Services, Inc., Raleigh,  
NC 27605

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30722

Key words: facilitator, implementation, leadership, problem solving,  
project management

## W28 Caution in Managing for Continuous Improvement (D/TC)

Quality Management Division

*Managing the Human Factor for Continuous Improvement*

1158

Dr. Ralph Berkowitz, Managing Director, Resource Systems  
Management, Inc., Franklin, TN 37064

Key words: benchmarking, continuous improvement, continuous  
improvement process, human resources, management, procedures,  
return on investment, world class

*A Common Sense Approach to Quality Management*

1163

Richard D. Shainin, Shainin Consultants, Inc., Vienna, VA 22182

Key words: customer satisfaction, continuous improvement, process capability index, quality management, statistical engineering

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<b>50TH</b>	<b>May 13-15, 1996</b>	<b>Chicago, Illinois Chicago Hilton</b>
<b>51ST</b>	<b>May 5-7, 1997</b>	<b>Orlando, Florida Orange County Convention Center</b>
<b>52ND</b>	<b>May 4-6, 1998</b>	<b>Philadelphia, Pennsylvania Pennsylvania Convention Center</b>
<b>53RD</b>	<b>May, 24-26, 1999</b>	<b>Anaheim, California Anaheim Convention Center</b>